

## **Effects of accelerated and outdoor ageing on leachability and properties of compreg-laminated sesenduk wood**

### **ABSTRACT**

This study evaluated the effects of accelerated and outdoor ageing on compreg-laminated sesenduk (*Endospermum diadenum*) wood and correlations between these two ageing methods were established. For outdoor ageing, samples were exposed to tropical weather for 1, 3 and 6 months. For accelerated ageing, cyclic boil-dry treatment involving 1, 2, 5 and 10 cycles were employed. Results revealed that density and weight loss were observed after the ageing treatments. After 6 months of outdoor ageing, water absorption of aged phenol formaldehyde and phenol formaldehyde urea-treated samples increased from 3.0 to 13.3% and from 4.1 to 26.6% respectively. Similar behaviour was also observed for samples which underwent 10 cycles of accelerated ageing. Samples subjected to outdoor ageing had thickness swelling higher than that of accelerated ageing (4.3-4.5% vs 2.4-3.7%). Most of the samples lost 8.3 to 22.4% of initial modulus of rupture after 1 month of outdoor ageing. Treated samples retained 61.7 to 77.1% of its initial modulus of elasticity after 10 cycles of accelerated ageing while the untreated samples retained only 48.7%. Emission of formaldehyde decreased with increased exposure times and cyclic boil-dry cycles. As confirmed by Pearson's correlation test, there were good correlations ( $r = 0.71-0.99$ ) for properties of samples between accelerated ageing and outdoor ageing.

**Keyword:** Ageing tests; Correlation; Cyclic boil-dry; *Endospermum diadenum*